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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,537

02/14/2005

Hitomu Watanabe

DAIN:800

1519

25944

7590

02/09/2007

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EXAMINER

CRUZ, MAGDA

ART UNIT

PAPER NUMBER

2851

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/524,537

Applicant(s)

WATANABE ET AL.

Examiner

Magda Cruz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 1-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 02/14/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "light absorbing particles" (claim 5) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

### ***Specification***

3. The abstract of the disclosure is objected to because:
- a. It exceeds 150 words in length.
  - b. The numerals should be deleted or written in parentheses.
- Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

4. Claims 1 and 9 are objected to because of the following informalities: the phrase "substantially perpendicular" (claim 1, line 4 and claim 9, line 7) is not clearly defined. For examining purposes, the examiner has interpreted the phrase to be "nearly perpendicular". The applicant is respectfully requested to clarify said phrase.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moshrefzadeh et al.

Moshrefzadeh et al. (US Patent Number 6,417,966 B1) disclose:

- Regarding claim 1, an optical element (Figure 7B, element 706) adapted to emit image light rays substantially perpendicularly incident (Figure 7B, element 712) on an entrance surface thereof in a direction substantially perpendicular to an exit surface (i.e. since the phrase "substantially perpendicular" has been interpreted as "nearly perpendicular", then the emitted ray  $\alpha_1$  could be interpreted as a light ray substantially perpendicular to the exit surface; clearly illustrated in Figure 7B) thereof regardless of incidence position on the entrance surface and to absorb stray light rays (Figure 7B, element 704) obliquely incident on the entrance surface (Figure 7B, element 710) and external light fallen on the exit surface (Figure 7B, lower side of element 706).
- Regarding claim 9, a Fresnel lens sheet (Figure 4A, element 402) that deflects image light rays incident (Figure 4B, element 420) on an entrance surface thereof toward a viewing side in a direction substantially

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perpendicular to an exit surface (Figure 4B, element 424), wherein the contrast improving sheet (Figure 4A, element 408) being disposed on the viewing side of the Fresnel lens sheet (Figure 4A, element 402).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to interpreted the emitted light ray  $\alpha_1$  as a light ray substantially perpendicular to the exit surface, since said light ray is nearly perpendicular to the exit surface, for the purpose of producing a viewing angle in one or more directions (column 7, lines 21-22).

7. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moshrefzadeh et al. in view of Sekiguchi.

Moshrefzadeh et al. (US Patent Number 6,417,966 B1) teach the salient features of the present invention as explained above (see rejection under §102(b)), except (regarding claims 10 and 12) a lenticular lens sheet disposed on the viewing side of the Fresnel lens sheet, and (regarding 11) a lenticular lens sheet coated with a light absorbing layer.

Sekiguchi (US Patent Number 6,961,176 B2) discloses:

- Regarding claims 10 and 12, a lenticular lens sheet (Figure 15, element 32) disposed on the viewing side of the Fresnel lens sheet (Figure 15, element 1).
- Regarding 11, a lenticular lens sheet (Figure 15, element 32) coated with a light absorbing layer (Figure 15, element 33).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the lenticular lens sheet disclosed by Sekiguchi in combination with Moshrefzadeh et al.'s invention for the purpose of suppressing the reduction of contrast in an image due to reflected light (Sekiguchi, column 4, lines 48-49).

***Allowable Subject Matter***

8. Claims 2-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the prior art of record neither shows nor suggests a contrast improving sheet comprising a second optical functional element attached to a surface, on a viewing side, of the first optical functional element, and provided with a light path correcting layer for correcting light paths followed by the image light rays totally reflected by the total-reflection facets of the protrusions such that the image light rays are emitted through an exit surface thereof substantially perpendicularly to the exit surface.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee (US Patent Number 5,768,014) discloses a rear projection screen having improved contrast and brightness.

Watanabe et al. (US Patent Number 6,987,624 B2) teach a Fresnel lens sheet and rear projection screen.

Osawa et al. (US Patent Number 6,995,907 B2) show a diffusion sheet for use in a transmission type screen.

Goto et al. (US Patent Number 7,072,109 B2) disclose a projection screen and projection display.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**DIANE LEE**  
**SUPERVISORY PATENT EXAMINER**

Magda Cruz  
Patent Examiner

February 5, 2007